## This Page Is Inserted by IFW Operations and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

## IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents will not correct images, please do not report the images to the Image Problem Mailbox.

## What is claimed is:

A light branching apparatus, comprising:
 an optical splitter which splits an optical
 signal for a plurality of channels on a first optical
 fiber into at least a first optical channel signal on
 a first channel of a second optical fiber and a
 plurality of second optical channel signals on a
 plurality of second channels of a third optical fiber;
 and

a first wavelength dispersion compensator which

10 is provided for said first channel and compensates

wavelength dispersion of said first optical channel

signal due to said optical splitter.

2. The light branching apparatus according to claim 1, further comprising:

a second wavelength dispersion compensator
which is provided for said plurality of second

channels and compensates wavelength dispersion of said
plurality of second optical channel signals due to
said optical splitter.

3. The light branching apparatus according to claim 1, wherein said first wavelength dispersion compensator compensates wavelength dispersion of said first optical channel signal due to said second optical fiber, in addition to said wavelength

dispersion of said first optical channel signal due to said optical splitter.

- 4. The light branching apparatus according to claim 3, wherein said first wavelength dispersion compensator compensates said wavelength dispersion of said first optical channel signal due to said second optical fiber by difference in length between said second optical fiber and said third optical fiber on which said first optical channel signal is selectively propagated.
  - 5. The light branching apparatus according to claim 4, further comprising:

an optical switch which switches a channel from one of said plurality of second channels to said first 5 channel.

6. The light branching apparatus according to claim 1, further comprising:

said third wavelength dispersion compensator which is provided for said first channel and compensates wavelength dispersion of said first optical channel signal due to said second optical fiber.

7. The light branching apparatus according to

claim 1, further comprising:

said fourth wavelength dispersion compensator
which is provided for a third channel of said second

optical fiber and compensates wavelength dispersion of
a third optical channel signal inputted to said light
branching apparatus due to said second optical fiber.

- 8. The light branching apparatus according to claim 1, wherein said plurality of optical channel signals are compensated in units of channels, and said first wavelength dispersion compensator includes at least a first wavelength dispersion compensating element for the channel of said first optical channel signal.
  - 9. An optical communication system comprising: a first optical fiber connected to a first station;
- a second optical fiber connected to a second 5 station;
  - a third optical fiber connected to a third station; and
    - a light branching apparatus, which comprises:

an optical splitter which splits an optical

10 signal for a plurality of channels on said first

optical fiber from said first station into at least a

first optical channel signal on a first channel of

said second optical fiber and a plurality of second optical channel signals on a plurality of second channels of said third optical fiber; and

15

a first wavelength dispersion compensator which is provided for said first channel and compensates wavelength dispersion of said first optical channel signal due to said optical splitter.

10. The optical communication system according to claim 9, further comprising:

a second wavelength dispersion compensator
which is provided for said plurality of second

5 channels and compensates wavelength dispersion of said
plurality of second optical channel signals due to
said optical splitter.

- 11. The optical communication system according to claim 10, wherein said first wavelength dispersion compensator compensates wavelength dispersion of said first optical channel signal due to said second
- 5 optical fiber, in addition to said wavelength
  dispersion of said first optical channel signal due to
  said optical splitter.
  - 12. The optical communication system according to claim 11, wherein said first wavelength dispersion compensator compensates said wavelength dispersion of

said first optical channel signal due to said second

5 optical fiber by difference in length between said
second optical fiber and said third optical fiber on
which said first optical channel signal is selectively
propagated.

13. The optical communication system according to claim 12, further comprising:

an optical switch which switches a channel from one of said plurality of second channels to said first 5 channel.

14. The optical communication system according to claim 9, further comprising:

said third wavelength dispersion compensator which is provided for said first channel and compensates wavelength dispersion of said first optical channel signal due to said second optical fiber.

15. The optical communication system according to claim 9, further comprising:

which is provided for a third channel of said second

optical fiber and compensates wavelength dispersion of
a third optical channel signal inputted to said light
branching apparatus due to said second optical fiber.

- 16. The optical communication system according to claim 9, wherein said plurality of optical channel signals are compensated in units of channels, and said first wavelength dispersion compensator includes at least a first wavelength dispersion compensating element for the channel of said first optical channel signal.
- 17. A light branching apparatus comprising:

  an optical switch which switches a transmission

  channel of a first optical channel signal on a first

  optical fiber from a first channel on a second optical

  fiber to a second channel on a third optical fiber;
- a wavelength dispersion compensator which compensates wavelength dispersion of said first optical channel signal due to said second optical fiber by difference in length between said second optical fiber and said third optical fiber.
  - 18. A light branching apparatus, comprising:

    an optical splitter which splits at least a
    first optical channel signal from an optical signal

    for a plurality of channels on a first optical fiber

    5 to transmit onto a first channel of a second optical
    fiber: and

a first wavelength dispersion compensator which is provided for said first channel and compensates

wavelength dispersion of said first optical channel
10 signal due to said second optical fiber.

19. The light branching apparatus according to claim 18, further comprising:

a second wavelength dispersion compensator
which is provided for a second channel of said second
optical fiber, and compensates wavelength dispersion
of a second optical channel signal supplied on said
second channel due to said second optical fiber.